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**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Applicant(s): Beil et al.

Examiner:

Serial No.: 10/088,404

Group Art Unit:

Filed: September 14, 2000

Docket: 298-157

For: DEVICE AND METHOD FOR  
HIGH-SENSITIVITY RESOLUTION DETECTION

Dated: October 2, 2002

Assistant Commissioner for Patents  
Washington, D.C. 20231

**SUPPLEMENTAL PRELIMINARY AMENDMENT**

Sir:

Please enter the following Supplemental Preliminary Amendment in the above-identified application:

**IN THE SPECIFICATION:**

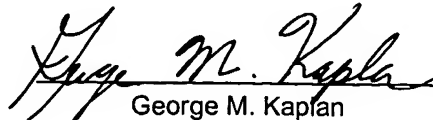
Change Page 3, line 6-Page 4, line 8 to read as follows:

- -Acoustic surface waves have been in use for the past 30 years for numerous applications in high-frequency technology and sensor technology. A surface wave can interact with external variables, as indicated by A. Wixforth in 1987 (Dissertation of A. Wixforth, University of Hamburg, 1987) for the interaction of surface waves with free charge carriers. In similar manner, according to U.S. 5,235,235 and U.S. 5,325,704, a mass-induced overlay can be detected in the substrate. The damping of a surface wave by mechanical loading by the substrate is described in U.S. 5,767,608 and U.S.

**CERTIFICATION UNDER 37 C.F.R. § 1.10**

I hereby certify that this correspondence and the documents referred to as enclosed are being deposited with the United States Postal Service on date below in an envelope as "Express Mail Post Office to Addressee" Mail Label Number EV140195356US addressed to: Assistant Commissioner for Patents, Washington, D.C. 20231.

Dated: October 2, 2002

  
George M. Kaplan



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Device and Method for High-Sensitivity  
Resolution Detection

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The invention concerns a device and a method for high-sensitivity resolution detection of an external variable with the help of acoustic surface waves.

Acoustic surface waves have been in use for the past 30 years for numerous applications in high-frequency technology and sensor technology. A surface wave can interact with external variables, as indicated by A. Wixforth in 1987 (Dissertation of A. Wixforth, University of Hamburg, 1987) for the interaction of surface waves with free charge carriers. In similar manner, according to U.S. 5,235,235 and U.S. 5,325,704, a mass-induced overlay can be detected on the substrate. The damping of a surface wave by mechanical loading by the substrate is described in U.S. 5,767,608 and U.S. 5,838,088. If a variety of surface wave transducers are used to generate various surface waves that pass through a passage of varying length, the location of the mechanical loading can be located by means of the differing delay times. Surface waves can be generated with the help of interdigital transducers (IDT) chiefly on piezoelectric substrates (R.M. White and F.W. Voltmer, Applied Physics Letters 7, pages 314 ff (1965)). Interdigital transducers have two electrodes with finger-type extensions, which